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greater narrowness and more pointed apex, besides duller color, was unmistakably different from that of *S. robustus*.

The purpose of this paper, however, is not to announce a mere want of exact accord in the results of two independent studies of the plants in question but rather to bring out the existence of still another New England bulrush of the *S. robustus* group certainly very distinct from any other at present recognized. This plant was collected by me in mature fruit August 20, 1898, on the shore of Somes Sound, Mt. Desert, Maine, growing in company with *S. paludosus*. This plant may appropriately bear the name of Mr. Fernald, through whose critical industry the old genus *Scirpus* in New England has become scarcely recognizable in its lineaments of to-day.

**Scirpus Fernaldi** sp. nov. Rather pale green, from 4–8 dm. high, the slender culms sharply three-angled and striate: stem-leaves long and narrow, the longer ones equalling or surpassing the inflorescence, 2–6 mm. wide, slenderly attenuate: primary involucre leaf erect, mostly 15–20 cm. long: spikes rather pale, short-ovate or finally broadly ovate, mostly 10–15 mm. long, 1–3 in a sessile or stipitate cluster and 1–5 solitary, on slender stiffly flexuous or crinkled, wiry, diverging peduncles 2–7 cm. long: scales finely close-puberulent, the lower ones often rather widely ascending, membranous, acuminate, entire or bifid or becoming lacerate, the midvein excurrent in a slender flexuous or recurved awn 3–12 mm. long: achene rather yellowish-brown and shining, broadly truncated, obovoid-cuneate, 2.5–3 mm. long, and broad, usually slightly longer than broad, almost equally trigonous or slightly depressed trigonous, the angles rounded or the dorsal swelling more or less umbonate, short-mucronulate and sometimes slightly retuse, the slender style several times the length of the achene, bearing three slender stigmas; bristles shorter than or subequal with the achene.

Type in herbarium of the New York Botanical Garden.

The pale, short-ovoid spikes, some of them on slender, elongated peduncles, and bluntly trigonous achenes, mark this plant off distinctly from all of its near allies.

## A WEEPING CRATAEGUS

BY JOHN K. SMALL

Several years ago Mr. A. H. Curtiss sent me specimens of a very slender *Crataegus* which he had collected near Crestview in

western Florida. A year later the collectors of the Biltmore Herbarium secured more complete specimens from the same locality, some of which, together with the field notes, Mr. C. D. Beadle has kindly placed in my hands. The species may be characterized as follows:

### ***Crataegus lacrimata***

A small tree 4-5 meters tall, with a single trunk 1-2 dm. thick, or more frequently with several main stems 1-2 meters long, the branches "weeping." Bark of the branches gray, often slightly scaly: branches and twigs zigzag, armed with thorns or thorn-like spurs 1-3 cm. long: leaves numerous; blades firm or leathery, cuneate-spatulate, 1-2 cm. long, or rarely slightly longer, predominately truncate or rounded at the apex or often a few of them merely blunt or acutish, toothed mainly at the apex or above the middle, with a minute dark gland terminating each tooth, 3-nerved, glabrous at least when mature, cuneately narrowed into slender finely pubescent petioles: corymbs 2-4-flowered, or sometimes developing a single flower: pedicels 8-13 mm. long, glabrous at least in age, occasionally bearing a few linear-filiform deciduous scales: hypanthium turbinate, the lower part even, the upper and more spreading part ridged: sepals 2.5-3 mm. long, about as long as the hypanthium, lanceolate or triangular-lanceolate from a triangular or more dilated base, entire, glabrous, with reddish or brownish tips, early and permanently recurving: petals 5, white, suborbicular, 5-6 mm. broad: stamens normally 20; anthers yellowish, about 1 mm. long: pomes pyriform when young, becoming globose or nearly so at maturity, yellow, orange or orange-red, with a thin but succulent flesh, crowned with a short neck representing the remains of the top of the hypanthium: mature carpels usually 3, minutely roughened, 5-6 mm. long and nearly as broad.

Along streams in pine woods, near Crestview, Florida.

*Crataegus lacrimata* is most closely related to *C. lepida* and like it has drooping branches with relatively short internodes; but *C. lepida* is a small thorny shrub seldom over 1 meter tall; it also differs in the glabrous or glabrate foliage and inflorescence and in the longer narrower and more attenuate bases of the leaf-blades. *Crataegus lepida* bears leaves with obovate, orbicular-ovate or nearly orbicular blades which at the time of unfolding are both pubescent and glandular, while the pedicels and hypanthium are tomentose during anthesis, whereas in the case of *C.*

*lacrimata* the twigs are glabrous or nearly so, the leaves with their narrow blades only slightly if at all pubescent, except on the petioles, and not glandular, while the pedicels and the hypanthium are glabrous. The types specimens (Biltmore Herbarium no. B 17 and B 969) are in the Herbarium of the N. Y. Botanical Garden.

The plants flower during the first half of April, good flowering specimens having been collected on April 8, 1899, while the fruits ripen after the middle of August and have fallen, usually before the first of September.

## REVIEWS

### Seed Plants\*

The first part of the "Morphology of Spermatophytes" deals with the Gymnosperms alone, and is presented as the outgrowth of a course of lectures and laboratory work at Chicago University. A chapter is devoted to each of the four orders, Cycadales, Ginkgoales, Coniferales and Gnetales. In the sections of these chapters on vegetative organs there are a number of half-tone habit illustrations from photographs but the majority of original illustrations are those of the development of the ovule and pollen grain in *Pinus Laricio* by Chamberlain.

The chapter on the Conifers is naturally the most detailed, both from the present importance of the group in the temperate zone, and since more morphological and cytological work has been done on it. The Gnetales are treated purely from comparison of literature owing to difficulty in obtaining material. The internal treatment of each group is what one would expect, dealing first with the vegetative organs including a limited amount of anatomy, more especially of the stem. The spore-producing members, the gametophytes and the embryo are the other sections of these four chapters. One realizes in comparing the review of the embryology of the four groups how much work is still to be done in tracing the stages of the development of the critical regions of the embryo itself. The authors have, it seems, not added to our knowledge on this point. The question of the possible homologies of the ovuliferous scale and bract is considered at some length and a working decision given in favor

\*Coulter, John M., and Chamberlain, Charles J. Morphology of Spermatophytes. Part I. Gymnosperms, 8vo., pp. x + 188. D. Appleton & Co., N. Y., 1901. Price, \$1.75.